Analysis of Factors Affecting Rice Farmer Satisfaction with Subsidized Fertilizer Purchases in Babaksari Village Gresik Regency East Java

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ABSTRACT

The subsidized fertilizer program in Babaksari Village, Dukun District, Gresik Regency has greatly helped ease the burden on rice farmers by cutting fertilizer prices as one of the rice cultivation infrastructures, but of course this program does not always work well, causing farmers to feel dissatisfied. This study aims to analyze the influence of product quality factors, prices, subsidized fertilizer policies, and service quality on the satisfaction of rice farmers in Babaksari Village, Dukun District, Gresik Regency. The sampling method is random sampling. The study sample amounted to 62 rice farmers. Data is processed using the PLS-SEM method through WARP PLS 7.0 software. The results showed that product quality (X1), price (X2) and subsidized fertilizer policy (X3) factors had a positive and significant effect on rice farmers' satisfaction in purchasing subsidized fertilizers. Meanwhile, the service quality factor does not have a positive and significant effect on farmer satisfaction in purchasing subsidized fertilizers. The problem lies in the quality of subsidized fertilizer services by core members of farmer groups, therefore it is necessary to evaluate and change the mechanism of subsidized fertilizer services, by prioritizing the comfort and safety of farmers when purchasing subsidized fertilizers.

Keywords: Subsidized Fertilizer, Product Quality, Price, Subsidized Fertilizer Policy, Quality of Service, Rice Farmer

INTRODUCTION

Subsidized fertilizer is a government program the form of cutting fertilizer prices as an agricultural input that serves to nourish food crops, horticulture, and plantations. The Minister of Agriculture has issued a subsidized fertilizer policy since 1969 (Ragimun, Makmun, and Setiawan 2020). The procurement of subsidized fertilizer programs was formed as an effort to assist farmers in reducing the production costs of agricultural commodity cultivation. Therefore, the satisfaction of farmers as recipients of assistance is very important for evaluating the success of subsidized fertilizer programs.

Satisfaction is a feeling of pleasure or displeasure with a product that has been purchased in the hope that the product will provide good results (Hermansyah, Roessali, and Prasetyo 2022). The subsidized fertilizer program is a product offered by the government to farmers with low selling value and farmers act as consumers of subsidized fertilizer. Farmer satisfaction will be achieved if the factors affecting satisfaction can be understood. These factors are product quality, price, fertilizer subsidy policy, and service quality.

Product quality is the performance of the product in providing benefits according to its function. Product quality is a factor of consumer satisfaction with several indicators including performance, constraints, suitability, and product durability (Aditia *et al*., 2020). Price is a value offered by the company in selling its products and consumers give a certain amount of money to benefit from the product. Price indicators as a

factor of consumer satisfaction are affordability and price suitability with product benefits (Halim and Iskandar 2019). A subsidized fertilizer policy is a set of concepts and principles that guide farmers in obtaining subsidized fertilizer. Subsidized fertilizer policies include the use of farmer cards, restrictions on the acquisition of subsidized fertilizers, and determination of the type of subsidized fertilizer (Chakim et al. 2020).Service quality is a way or form of seller behavior that will determine the sense of security and comfort of consumers. Service quality indicators as customer satisfaction factors include tangibles, reliability, responsiveness, assurance, and empathy (Widjoyo, Semuel, and Karina 2014).

The subsidized fertilizer program offered by the government can be obtained by farmers on the condition that farmers grow food crops, horticulture, and plantations. Food crop agriculture includes rice, corn, and soybean commodities. Rice commodity agriculture is very important to pay attention to because rice is a commodity with the largest demand at the national level. Therefore, rice farmers form part of subsidized fertilizer customers.

The subsidized fertilizer policy was passed in 1969 and changes have been made in 2021 due to global economic conditions that led to an increase in the price of fertilizer production raw materials. These policy changes include an increase in subsidized fertilizer prices, restrictions on subsidized fertilizer types, and restrictions on subsidized fertilizer quotas obtained by farmers (Kautsar, Sofyan, and Makmur 2020).

Babaksari Village, Dukun District, Gresik Regency is an area producing rice commodities and subsidized fertilizers are programs expected by rice farmers. However, this program was not implemented properly because farmers' needs for the availability of subsidized fertilizers in Babaksari Village could not be met due to limited fertilizer stocks, and the uneven allocation of fertilizer products so some farmers who had been registered as members of farmer groups did not get subsidized fertilizers. Therefore, to achieve the goal of procuring a subsidized fertilizer program in Babaksari Village, it is necessary to analyze the factors that affect the satisfaction of rice farmers as an evaluation of the implementation of the subsidized fertilizer program.

RESEARCH OBJECTIVES

The purpose of this study was determined based on the problem of subsidized fertilizer in Babaksari Village, Dukun District, Gresik Regency, East Java. These problems are the increase in subsidized fertilizer prices, limited stocks of subsidized fertilizers, and the procurement time of subsidized fertilizers is not in accordance with the fertilization season. Therefore, the purpose of this study is to analyze the influence of product quality factors, price factors, fertilizer subsidy policy factors, and service quality factors on rice farmers' satisfaction in purchasing subsidized fertilizers in Babaksari Village.

RESEARCH METHODOLOGY

The research was conducted in Babaksari Village, Dukun District, Gresik Regency, East Java. The subjects of this study were all rice farmers in Babaksari Village. The total population of rice farmers in Babaksari Village is 163 people. The number of research samples is determined by the Slovin formula:

n= N1+Ne2

Information:

n = Sample size

N = Population size

e = *Standar error*

Determine the number of samples :

n= 1631+163 0,12

n= 1632,63

n= 61,97=62

Calculations with the Slovin formula, show that the sample of this study amounted to 62 rice farmers.

The processing of research data was carried out using PLS-SEM analysis with the help of WarpPLS 7.0 software to answer the research objectives, namely analyzing factors that affect rice farmers' satisfaction with subsidized fertilizer purchases. PLS-SEM analysis is carried out through several stages, including:

1. Line model specifications
2. Forming a path diagram model equation
3. Estimation of outer model and inner model parameters
4. Evaluation of the outer model and inner model
5. Research hypothesis testing

RESULTS AND DISCUSSION

Outer Model Evaluation

- **Validity of convergence**

Convergent validity can be satisfied if the Loading Factor value is > 0.70 and the Average Variance Extracted (AVE) value is > 0.50. The results of data processing with WarpPLS 7.0, the Loading Factor value shows that all research indicators have met convergent validity. While the AVE value can be show from Table 1.

Table 1 Average Variance Extracted (AVE) Values

Variable	AVE value	Result	Information
Product Quality (X1)	0.429	<0.50	Invalid
Price (X2)	0.683	>0.50	Valid
Fertilizer Subsidy Policy (X3)	0.639	>0.50	Valid
Quality of Service (X4)	0.341	<0.50	Invalid
Farmer Satisfaction (Y)	0.462	<0.50	Invalid

Source: WarpPLS 7.0 Processing Results

Table 1 shows that from the AVE value it can be seen that the variables Product Quality (X1), Service Quality (X4), and Farmer Satisfaction (Y) have low values, in the sense that the three constructs can only explain less than 50% of the indicator variants. While the variable Price (X2) and Subsidized Fertilizer Policy (X3) have a value of >0.50. This means that both constructs can account for more than 50% of the variance of the indicator.

- **Discriminant Validity**

The validity of the discriminant can be known from the cross-loading value and the AVE square value. From the results of data processing, it can be seen that all indicators meet the cross-loading criteria. While the square value of AVE can be show from Table 2

Table 2. AVE Square Value

	X1	X2	X3	X4	Y
X1	(0.655)	0.270	0.182	0.173	0.447
X2	0.270	(0.827)	0.152	0.237	0.536
X3	0.182	0.152	(0.799)	0.355	0.269
X4	0.173	0.237	0.355	(0.584)	0.493
Y	0.447	0.536	0.269	0.493	(0.680)

Source: WarpPLS 7.0 Processing Results

Table 2 shows the AVE square value of the Product Quality (X1) construct of 0.655, Price (X2) of 0.827, Subsidized Fertilizer Policy (X3) of 0.799, Service Quality (X4) of 0.584, and Farmer Satisfaction (Y) of 0.680. This result shows that the AVE square root value of the whole construct is fulfilled because it has a higher value than the correlation with other constructs in one diagonal both from above and from below.

- **Reliability Test**

Reliability Test using Composite Reliability measurements. Composite reliability is a measure of the true value of the reliability of a construction (Hair *et al.*, 2017). An instrument indicator can be said to be reliable if the Composite Reliability value > 0.70. Composite Reliability results are presented in table 3.

Table 3. Composite Reliability

Variable	Composite Relianility	Result	Keterangan
Product Quality (X1)	0.741	>0.70	Reliable
Price (X2)	0.812	>0.70	Reliable
Fertilizer Subsidy Policy (X3)	0.780	>0.70	Reliable
Quality of Service (X4)	0.716	>0.70	Reliable
Farmer Satisfaction (Y)	0.772	>0.70	Reliable

Source: WarpPLS 7.0 Processing Result

Table 3 shows the Composite Reliability value of product quality variables (X1) of 0.741, Price (X2) of 0.812, subsidized fertilizer policy (X3) of 0.780, Service quality (X4) of 0.716 and rice farmer satisfaction variable (Y) of 0.772. This shows that all indicators in this study have a Composite Reliability value of > 0.70. This means that this research instrument is reliable.

- **Inner Model Test**

The Inner Model test can be obtained from the analysis of the fit model. The model fit test consists of Average Path Coefficient (APC), Average R-squared (ARS), Average block VIF (AVIF), and Average full collinearity VIF (AFVIF). The results of the fit model test are presented in table 4.

Table 4. Model Fit

No.	*Model Fit and Quality Indices*	Result	Model Fit Criteria
1.	*Average Path coefficient* (APC)	0.282 ; p=0.004	Accepted if p < 0.05
2.	*Average R-squared* (ARS)	0.661 ; p<0.001	Accepted if p < 0.05
3.	*Average adjusted R-squared* (AARS)	0.637 ; P<0.001	Accepted if p < 0.05
4.	*Average block VIF* (AVIF)	1.484	Accepted if ≤ 5
5.	*Average full collinearity VIF (AFVIF)*	1.458	Accepted if ≤ 5

Source: WarpPLS 7.0 Processing Results

Table 4 shows the results of Average Path Coefficient (APC) of 0.282 with p values of 0.004 < 0.05, Average R-squared (ARS) of 0.661 with p-values of 0.001 < 0.05, Average block VIF (AVIF) of 1.484 ≤ 5, and Average full collinearity VIF (AFVIF) of 1.458 ≤ 5. The data shows that the results of the study meet the evaluation criteria of the fit model, meaning that the structural model of this study is appropriate or supported by the data. In addition, the R squared value of 0.661 shows that the endogenous variable Farmer Satisfaction can be explained by exogenous variables Product Quality, Price, Subsidized Fertilizer Policy, and Service Quality of 66.1% with a balanced level of influence, while the other 33.9% can be explained by other variables outside the study.

Test the hypothesis

- **Path Coefficients and P-values**

Path Coefficient for the analysis of the relationship of exogenous variables to endogenous variables with the criteria of path value > 1 there is a positive relationship, the value of path 0 means there is no relationship, and if the value of path is -1 then there is a negative relationship. While the p-value is a test of the influence of the level of significance of latent variables with p-value criteria < 0.10 then it has weak significance, p-value < 0.05 means significance, and if p-value < 0.01 means high significance (Solimun et al., 2017)

Table 5. Path Coefficients and P-values

Variable	Value *Path Coefficients*	Relationship	*P value*	Influence
X1 to Y	0.265	Positive	0.013	Significant
X2 to Y	0.533	Positive	0.001	Significant
X3 to Y	0.236	Positive	0.024	Significant
X4 to Y	0.093	Positive	0.227	Insignificant

Source: Warp PLS 7.0 Processing Results

Table 5 shows that all exogenous variables have a positive relationship with endogenous variables. The p-value test produces a product quality variable (X1), and the subsidized fertilizer policy (X3) has a moderate level of significance. The price variable (X2) has a high level of significance, while the service quality variable does not have a significant effect on the farmer satisfaction variable (Y) because the p value is greater than the significance criterion.

- **T Test**

The T-test criterion is that the value of T ratios for path coefficients in WarpPLS modeling must be greater than the value of T distribution, which is 1.999 (Anderson *et al,* 2018). Therefore, the results of the t-test can be show in Table 6.

Table 6. T Test Value

Variable	T *ratios for path coefficients*	Result
X1 to Y	2.289	> 1,999
X2 to Y	5.044	> 1,999
X3 to Y	2.017	> 1,999
X4 to Y	0.753	< 1,999

Source: Warp PLS 7.0 Processing Results

The results of the t-test show the results of the research hypothesis test analysis of factors that affect the satisfaction of rice farmers with the purchase of subsidized fertilizers:

- The Effect of Product Quality (X1) on Rice Farmer Satisfaction (Y)

H_0: Product Quality Factor (X1) There is no positive and significant influence on Rice Farmer Satisfaction (Y) in purchasing subsidized fertilizers.

H_1: Product Quality Factor (X1) has a positive and significant effect on Rice Farmer Satisfaction (Y) in purchasing subsidized fertilizers.

T-test : 2.289 > 1.999 = H_0 rejected

- The Effect of Price (X2) on Rice Farmer Satisfaction (Y)

H_0: Price Factor (X2) There is no positive and significant influence on Rice Farmer Satisfaction (Y) in purchasing subsidized fertilizers.

H_1: Price Factor (X2) has a positive and significant effect on Rice Farmer Satisfaction (Y) in purchasing subsidized fertilizers.

T-test : 5.044 > 1.999 = H_0 rejected

- The Effect of Subsidized Fertilizer Policy (X3) on Rice Farmer Satisfaction (Y)

H_0: Subsidized Fertilizer Policy Factor (X3) There is no positive and significant influence on Rice Farmer Satisfaction (Y) in purchasing subsidized fertilizer.

H_1: Subsidized Fertilizer Policy Factor (X3) has a positive and significant effect on Rice Farmer Satisfaction (Y) in purchasing subsidized fertilizer.

T-test : 2.017 > 1.999 = H_0 rejected

- The Effect of Service Quality (X4) on Rice Farmer Satisfaction (Y)

H_0: Service Quality Factor (X4) There is no positive and significant influence on Rice Farmer Satisfaction (Y) in purchasing subsidized fertilizers.

H_1: Service Quality Factor (X4) has a positive and significant effect on Rice Farmer Satisfaction (Y) in purchasing subsidized fertilizers.

T-test : 0.753 < 1.999 = H_0 accepted

CONCLUSION

Product quality factors, prices, and subsidized fertilizer policies have a positive and significant effect because of the value of T ratios for path coefficients > T distribution. While the service quality factor has no positive and significant effect because the test value of T 0.753 < 1.999 then H0 is accepted. This means that product quality factors, prices and subsidized fertilizer policies are very important in influencing rice farmer satisfaction, while service quality factors need to be improved to achieve rice farmer satisfaction in purchasing subsidized fertilizers.

SUGGESTION

The results showed that the service quality factor did not have a positive and significant effect on the satisfaction of rice farmers in purchasing subsidized fertilizers. Therefore, it is necessary to re-evaluate the pattern of subsidized fertilizer services and it is necessary to conduct an in-depth analysis in future research on the quality of subsidized fertilizer program services.

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